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The Effective and Ethical Development of Artificial Intelligence: An Opportunity to Improve Our Wellbeing

Appeal Algorithmic Decisions

This input paper was prepared by Anne Matthew, Michael Guihot and Nic Suzor

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Ability to Appeal Algorithmic Decisions

Submission by:

Ms Anne Matthew, Lecturer, Commercial and Property Law Research Centre, Queensland University of Technology, ('QUT'), Faculty of Law, a.matthew@qut.edu.au

Dr Michael Guihot, Senior Lecturer, Commercial and Property Law Research Centre, QUT, Faculty of Law michael.guihot@qut.edu.au

Associate Professor Nic Suzor, QUT Faculty of Law, n.suzor@qut.edu.au. Associate Professor Suzor is the recipient of an Australian Research Council DECRA Fellowship (Project Number D3160101542)

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Introduction

We thank the Australian Council of Learned Academies for this opportunity to submit a policy input paper for consideration in your preparation of the Horizon Scanning Report on AI for the Australian Commonwealth Science Council. We have recently conducted a research project examining regulatory approaches to Artificial Intelligence ('AI'). Our most recent output from this project is, 'Nudging Robots: Innovative Solutions to Regulate Artificial Intelligence' (2017) 20(2) *Vanderbilt Journal of Entertainment & Technology Law* 385 (attached). Our research has considered the involvement of AI in legal decision making and concluded that this was an area that should be regulated. Our paper outlines rather extensively a range of options for regulators and proposes a risk-based approach to regulation. That is, public regulators should be alert to the spectrum of risks posed by specific applications of AI and adopt targeted strategies in their regulatory approach in order to address the risks identified. This submission outlines the risks arising with automated legal decision making, proposes that human involvement in legal decision making processes is vital to address the limits of algorithmic justice, and proposes consideration of a model similar to that in Europe. We support the development of regulation allowing challenge of algorithmic decision making by AI.

Risks arising in Algorithmic Decision Making by Artificial Intelligence

AI ought to be capable of quite sophisticated legal reasoning given the structure and context of legal argument.[1] In our paper, 'Nudging Robots, Innovative Solutions to Regulate Artificial Intelligence' we noted that part of the attraction of applying AI to legal decision making is to improve transparency, consistency and to avoid the potential for ideological bias.[2] The risks associated with automated

[1] Trevor Bench-Capon and Henry Prakken, 'Argumentation' in Arno R Lodder and Anja Oskamp (eds), *Information Technology and Lawyers: Advanced Technology in the Legal Domain, from Challenges to Daily Routine* (Springer, 2006), 61, 62.

[2] Michael Guihot, Anne F Matthew and Nicolas Suzor, 'Nudging Robots: Innovative Solutions to Regulate Artificial Intelligence' (2017) 20(2) *Vanderbilt Journal of Entertainment & Technology Law* 385, 408 citing Bench-Capon and Prakken, above n1; Maria Jean J Hall et al, 'Supporting Discretionary Decision-Making with Information Technology: A case Study in the Criminal Sentencing Jurisdiction'

decision making include the incapacity of algorithms to 'exercise discretion and make situational value judgments'.[3] AI is not known to have strengths in exercising discretion, induction or intuition, all of which may be required to varying degrees in legal decision making.[4] AI is unlikely to have capacity to make value judgments or to appraise and evaluate the social repercussions of the decision.[5] AI may be objective, since it potentially lacks predisposition or ideological bias, but legal decision making ought to involve some normative inputs of which AI is incapable, such as evaluating the absurdity of an interpretation.[6]

Two decades ago Leith argued that capacity to exercise discretion may limit the potential of AI to 'fully represent the richness of legal knowledge in any useful way'.[7] The subsequent development of expert legal systems seems to have entered into somewhat of an 'AI Winter' before emerging recently with a new-found maturity, still plagued by old problems. Leith, who remains sceptical as to the use of AI in legal expert systems, including their use in legal decision making, acknowledges that expert legal systems are attractive given their promise to improve legal processes but suggests we ought to remain wary of their allure.[8]

Mechanising decision making through algorithms raises serious questions about what could be lost: to what extent 'an algorithm can have a heart',[9] or 'deal with the unexpected, quirky or unique individual that may require appeals to a sense of justice?'[10] We agree with the proposal of Lippe, Katz and Jackson that development of algorithms in legal decision making ought to focus on the optimal combination of AI and humans in order to provide a balanced decision making process.[11] AI should not be expected to make reliable, definitive legal decisions that entail the exercise of discretionary judgments; resolution of 'conflicting arguments', or 'ambiguous and contradictory evidence';[12] or the

(2005) 2 *University of Ottawa Law and Technology Journal* 1, 31; Betsy Cooper, 'Judges in Jeopardy: Could IBM's Watson Beat Courts at Their Own Game?' (2011) *Yale Law Journal Forum* 87, 97-99.

[3] Guihot, Matthew and Suzor, above n 2, 408-9, citing Uri J Schild, *Expert Systems and Case Law* (1991), 121; Hall et al, above n 2, 8-9; Philip Leith, 'The Judge and the Computer: How Best 'Decision Support'?' (1998) 6 *Artificial Intelligence and Law* 289, 294-296; Paul Lippe, Daniel Martin Katz and Dan Jackson, 'Legal by Design: A New Paradigm for Handling Complexity in Banking Regulation and Elsewhere in Law' (2015) 93 Oregon Law Review 833, 849; Brian Simpson, 'Algorithms or Advocacy: Does the Legal Profession have a Future in a Digital World?' (2016) 25(1) *Information and Communications Technology Law* 50, 56; John Zeleznikow, 'Building Decision Support Systems in Discretionary Legal Domains' (2000) 14 *International Review of Law, Computers & Technology* 341, 343.

[4] Guihot, Matthew and Suzor, above n 2, 409; Hall et al, above n2, 9.

[5] Hall et al, above n 2, 9; Cass R Sunstein, 'Of Artificial Intelligence and Legal Reasoning' (2001) 8 *University of Chicago Law School Roundtable* 29, 34-35.

[6] Cooper, above n 2, 99.

[7] Leith, above n 3, 304.

[8] Philip Leith, 'The Rise and Fall of the Legal Expert System' (2016) 30(3) *International Review of Law, Computers & Technology* 94, 94, 101, 104; Philip Leith, 'The Emperor's New Expert System' (1987) 50 Modern Law Review 128; Philip Leith, 'Logic, Formal Models and Legal Reasoning' (1984) Jurimetrics 334.

[9] Simpson, above n 3, 56.

[10] Ibid.

[11] Guihot, Matthew and Suzor, above n 2, 409; Lippe et al, above n 3, 849.

[12] Schild, above n 3, 19, 27, 193; Zeleznikow, above n 3, 334.

interpretation of facts or data.[13] A wiser course is to limit the deployment of algorithms in legal decision making to better inform humans decisions.[14]

Even where AI is used to support human decision making with the goal of increasing consistency, there are still substantial risks. The human element of current legal decision making models is often cast as the primary culprit contributing to inconsistency in legal decision making. The very process of determining the components of a decision-making algorithm will quite naturally be drawn to the more mechanistic elements of existing processes, further isolating and potentially de-valuing the more human elements of existing processes. Algorithmic decision making tends to rely on frequency and predictive systems, not normative evaluation.[15] While consistency in legal decision making does sound like an admirable goal, it may not be at all desirable should it lead to standardisation.[16] Put simply, standardisation of legal decision making may well prove to be a dystopia. Standardisation in automated legal decision making processes has been seen to have a regulatory effect on people involved in the decision making process, including those that are required to implement the decision.[17] This regulatory impact may extend to an unintended chilling effect on individualisation, even where the legislature intended there to be some flexibility.[18] People involved in the decision making process may have difficulty deviating from the standardisation in order to reach a just decision with an element of human empathy and understanding of extenuating circumstances,[19] or to consider whether the decision is in the best interests of society.[20]

Recommendations

1. **Humans ought to be involved in decision making with legal effects**. As we stated in our paper, 'Nudging Robots: Innovative Solutions to Regulate Artificial Intelligence', the concerns we have raised above animate Article 22 of the EU's General Data Protection Regulation, which creates a new right for individuals "not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her."[21] The implication, at least in Europe, is that humans must somehow be involved in decision making, although how effective this is likely to be remains to be seen.
2. **Algorithms are unlikely to be explainable, which will complicate what can be effectively reviewed**. Difficulties with explainable algorithms are of particular concern for the design of an appeal process. With current legal decision making, transparency is a paramount concern and a significant feature of review and appeal processes. Concerns for transparency of the

[13] Zeleznikow, above n 3, 350; Anja Oskamp and Maaike W Tragter, 'Automated Legal Decision Systems in Practice: The Mirror of Reality' (1997) 5(4) *Artificial Intelligence and Law* 291, 312.
[14] Schild, above n 3, 19, 27, 193; Zeleznikow, above n 3, 334, 350; Anja Oskamp and Maaike W Tragter, 'Automated Legal Decision Systems in Practice: The Mirror of Reality' (1997) 5(4) *Artificial Intelligence and Law* 291, 312.
[15] Cooper, above n 2, 99.
[16] Hall et al, above n 3, 83.
[17] Oskamp and Tragter, above n 13, 293.
[18] Ibid.
[19] Hall et al, above n 3, 33.
[20] Oskamp and Tragter, above n 13, 308.
[21] Commission Regulation 2016/679, art 22(1), 2016 OJ (L 119) 46 (EU), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32016R0679; Guihot, Matthew and Suzor, above n 2, 409-410.

algorithmic evaluation, or lack of thereof, will become increasingly critical if decision making with legal ramifications is automated by algorithmic justice. If the decision-making process is opaque, the transformative impact may well extend to the character and quality of the law itself, and its interrelationship with society.[22] There have already been calls for legal decision making systems to be developed with more than just an understanding of 'rule handling skills'.[23]

Design of the appeal process, should begin with the carful and considered design of the decision making process itself. Developers and regulators require a deeper understanding of the social and ethical contextual framework and the needs of users of the decision making system.[24] Without such a deeper understanding, earlier research warns that we risk 'forcing crude AI systems on society' leading to 'results which do not promote social justice and human rights.'[25] These concerns for the development of systems with deep contextual understanding will become more pressing where AI systems share information with each other in order to inform improvement of their own process.[26]

3. **All regulators adopting algorithmic decision making processes should have a clear path for internal challenge or human review.** We reiterate that if Australian regulators take a similar approach to the EU requiring human involvement in decision making, this would both significantly reduce the risks we have discussed above and obviate the need for radically new mechanisms to facilitate challenges to algorithmic decisions of AI. The decision would be made by human relying on a range of inputs, only one of which would be the algorithm. Preliminary review should take place internally, rather than referral to a central external body for these reviews. Only once the decision has been internally reviewed should normative review be an option. We caution against the notion of a new centralised authority to deal with challenges to automated decision making processes. The increasing permeation of AI throughout almost every element of our society will continue apace. A new, dedicated centralised authority would soon find itself in a situation where it was required to be a ministry for everything.

[22] Abdul Paliwala, 'Rediscovering Artificial Intelligence and Law: An Inadequate Jurisprudence? (2016) 30 *International Review of Computing Technology* 107, 112-113.
[23] Ibid.
[24] Ibid.
[25] Ibid.
[26] Consider for example, Amanda Schaffer, 'Robots That Teach Each Other' (2016) 119 *MIT Technology Review* 48, where Schaffer explains data sharing goals to improve robot ability; Will Knight, 'Shared Robot Knowledge' (2016) 119 *MIT Technology Review* 25, 26.